

JAN 17 2008

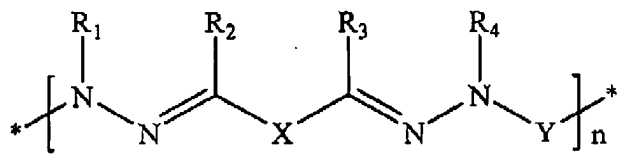
Application No. 10/772,069

AMENDMENTS TO THE CLAIMS

A detailed listing of all claims that are, or were, in the present application, irrespective of whether the claim(s) remains under examination in the application are presented below. The claims are presented in ascending order and each includes one status identifier. Those claims not cancelled or withdrawn but amended by the current amendment utilize the following notations for amendment: 1. deleted matter is shown by strikethrough for six or more characters and double brackets for five or less characters; and 2. added matter is shown by underlining.

Application No. 10/772,069

1. (Withdrawn-Currently Amended) An organophotoreceptor comprising:
 (a) a charge transport composition comprising molecules having the formula



where n is an average of a distribution of integers in which n is at least 2;

R₁, R₂, R₃, and R₄ comprise, each independently, H, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group;

X comprises an (N,N-disubstituted)arylamine group; and

Y is a bridging group, wherein Y comprises a $-(CH_2)_m-$ group where m is an integer between 1 and 30, inclusive, and one or more of the methylene groups is optionally replaced by O, S, N, C, Si, B, P, C=O, O=S=O, a heterocyclic group, an aromatic group, urethane, urea, an ester group, an NR₅ group, a CR₆, or a CR₇R₈ group where R₅, R₆, R₇, and R₈ are, each independently, a bond, H, hydroxyl, thiol, carboxyl, an amino group, an alkyl group, an alkenyl group, a heterocyclic group, an aromatic group, or part of a ring group and wherein if the bridging group contains a sulfur atom then the bridging group must contain at least two sulfur atoms;

(b) a charge generating compound; and

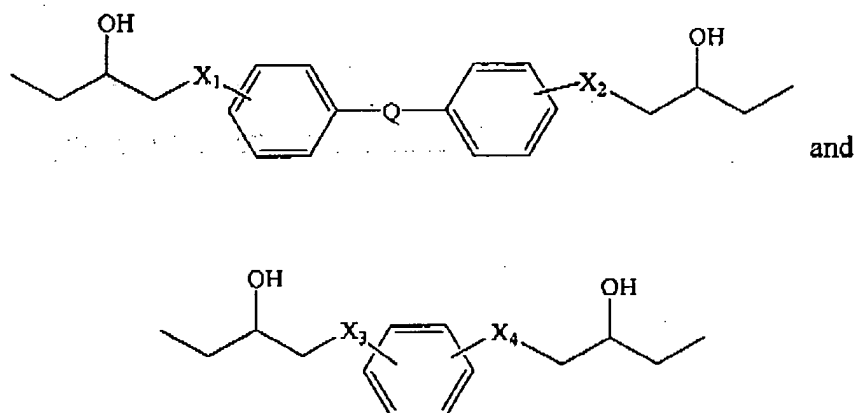
(c) an electrically conductive substrate over which the charge transport composition and the charge generating compound are located.

Application No. 10/772,069

2. (Withdrawn) An organophotoreceptor according to claim 1 wherein X is selected from the group consisting of a carbazole group, a julolidine group, a triarylamine group, a dialkylarylamine group, and an alkyldiarylamine group.

3. (Canceled).

4. (Withdrawn-Currently Amended) An organophotoreceptor according to claim [[3]] 1 wherein Y is selected from the group consisting of the formulae:



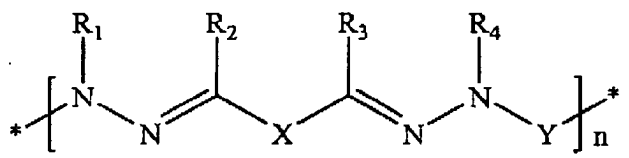
where Q, X₁, X₂, X₃, and X₄ are, each independently, O, S, or NR' where R' comprises H, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group.

5. (Withdrawn) An organophotoreceptor according to claim 1 further comprising an electron transport compound.

6. (Withdrawn) An organophotoreceptor according to claim 1 wherein said organophotoreceptor is in the form of a drum or a belt.

Application No. 10/772,069

7. (Withdrawn) An organophotoreceptor according to claim 1 comprising:
- (a) a charge transport layer comprising said charge transport composition and a polymeric binder; and
 - (b) a charge generating layer comprising said charge generating compound and a polymeric binder.
8. (Withdrawn) An organophotoreceptor according to claim 1 wherein n is at least 5.
9. (Withdrawn-Currently Amended) An electrophotographic imaging apparatus comprising:
- (a) a light imaging component; and
 - (b) an organophotoreceptor oriented to receive light from the light imaging component, the organophotoreceptor comprising an electrically conductive substrate and a photoconductive element on the electrically conductive substrate, the photoconductive element comprising:
 - (i) a charge transport composition comprising molecules having the formula



where n is an average of a distribution of integers in which n is at least 2;

Application No. 10/772,069

R₁, R₂, R₃, and R₄ comprise, each independently, H, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group;

X comprises an (N,N-disubstituted)arylamine group; and

Y is a bridging group, wherein Y comprises a $-(CH_2)_m-$ group where m is an integer between 1 and 30, inclusive, and one or more of the methylene groups is optionally replaced by O, S, N, C, Si, B, P, C=O, O=S=O, a heterocyclic group, an aromatic group, urethane, urea, an ester group, an NR₅ group, a CR₆, or a CR₇R₈ group where R₅, R₆, R₇, and R₈ are, each independently, a bond, H, hydroxyl, thiol, carboxyl, an amino group, an alkyl group, an alkenyl group, a heterocyclic group, an aromatic group, or part of a ring group and wherein if the bridging group contains a sulfur atom then the bridging group must contain at least two sulfur atoms; and

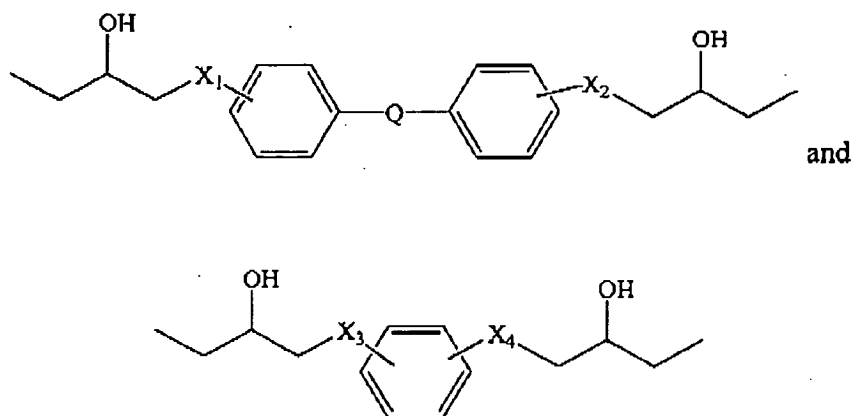
(ii) a charge generating compound.

10. (Withdrawn) An electrophotographic imaging apparatus according to claim 9 wherein X is selected from the group consisting of a carbazole group, a julolidine group, a triarylamine group, a dialkylarylamine group, and an alkyldiarylamine group.

11. (Cancelled).

12. (Withdrawn-Currently Amended) An electrophotographic imaging apparatus according to claim [[11]] 2 wherein Y is selected from the group consisting of the formulae:

Application No. 10/772,069



where Q, X₁, X₂, X₃, and X₄ are, each independently, O, S, or NR' where R' comprises H, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group.

13. (Withdrawn) An electrophotographic imaging apparatus according to claim 9 comprising a toner dispenser.

14. (Withdrawn) An electrophotographic imaging apparatus according to claim 9 further comprising an electron transport compound.

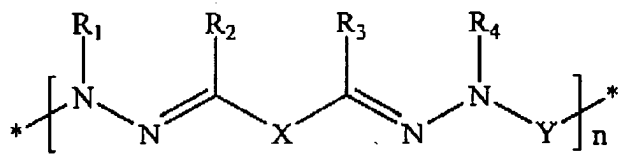
15. (Withdrawn) An electrophotographic imaging apparatus according to claim 9 wherein n is at least 5.

16. (Withdrawn-Currently Amended) An electrophotographic imaging process comprising:

(a) applying an electrical charge to a surface of an organophotoreceptor comprising an electrically conductive substrate and a photoconductive element on the electrically conductive substrate, the photoconductive element comprising:

Application No. 10/772,069

(i) a charge transport composition comprising molecules having the formula



where n is an average of a distribution of integers in which n is at least 2;

R₁, R₂, R₃, and R₄ comprise, each independently, H, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group;

X comprises an (N,N-disubstituted)arylamine group; and

Y is a bridging group, wherein Y comprises a $-(CH_2)_m-$ group where m is an integer between 1 and 30, inclusive, and one or more of the methylene groups is optionally replaced by O, S, N, C, Si, B, P, C=O, O=S=O, a heterocyclic group, an aromatic group, urethane, urea, an ester group, an NR₅ group, a CR₆, or a CR₇R₈ group where R₅, R₆, R₇, and R₈ are, each independently, a bond, H, hydroxyl, thiol, carboxyl, an amino group, an alkyl group, an alkenyl group, a heterocyclic group, an aromatic group, or part of a ring group and wherein if the bridging group contains a sulfur atom then the bridging group must contain at least two sulfur atoms; and

(ii) a charge generating compound;

(b) imagewise exposing the surface of the organophotoreceptor to radiation to dissipate charge in selected areas and thereby form a pattern of charged and uncharged areas on the surface;

(c) contacting the surface with a toner to create a toned image; and

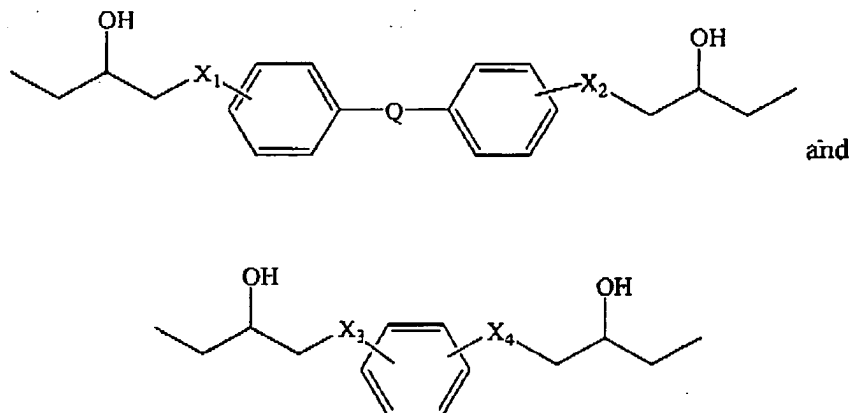
Application No. 10/772,069

(d) transferring the toned image to a substrate.

17. (Withdrawn) An electrophotographic imaging process according to claim 16 wherein X is selected from the group consisting of a carbazole group, a julolidine group, a triarylamine group, a dialkylarylamine group, and an alkyldiarylamine group.

18. (Canceled).

19. (Withdrawn-Currently Amended) An electrophotographic imaging process according to claim [[18]] 16 wherein Y is selected from the group consisting of the formulae:



where Q, X₁, X₂, X₃, and X₄ are, each independently, O, S, or NR' where R' comprises H, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group.

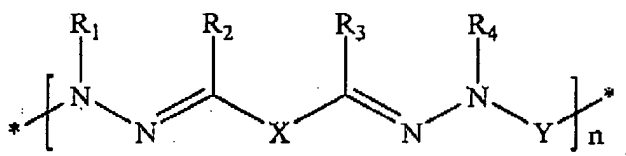
20. (Withdrawn) An electrophotographic imaging process according to claim 16 wherein the toner comprises a dispersion of colorant particles.

Application No. 10/772,069

21. (Withdrawn) An electrophotographic imaging process according to claim 16 further comprising an electron transport compound.

22. (Withdrawn) An electrophotographic imaging process according to claim 14 wherein n is at least 5.

23. (Currently Amended) A charge transport composition comprising molecules having the formula



where n is an average of a distribution of integers in which n is at least 2;

R₁, R₂, R₃, and R₄ comprise, each independently, H, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group;

X comprises an (N,N-disubstituted)arylamine group; and

Y is a bridging group, wherein Y comprises a -(CH₂)_m- group where m is an integer between 1 and 30, inclusive, and one or more of the methylene groups is optionally replaced by O, S, N, C, Si, B, P, C=O, O=S=O, a heterocyclic group, an aromatic group, urethane, urea, an ester group, an NR₅ group, a CR₆, or a CR₇R₈ group where R₅, R₆, R₇, and R₈ are, each independently, a bond, H, hydroxyl, thiol, carboxyl, an amino group, an alkyl group, an alkenyl group, a heterocyclic group, an aromatic group, or part of a ring group and wherein if the

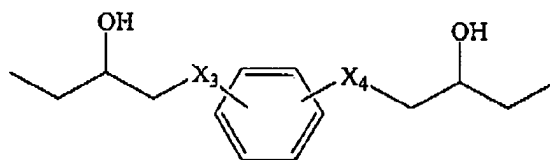
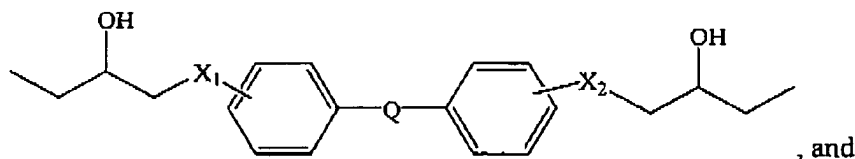
Application No. 10/772,069

bridging group contains a sulfur atom then the bridging group must contain at least two sulfur atoms.

24. (Original) A charge transport composition according to claim 23 wherein X is selected from the group consisting of a carbazole group, a julolidine group, a triarylamine group, a dialkylarylamine group, and an alkyldiarylamine group.

25. (Canceled).

26. (Currently Amended) A charge transport composition according to claim ~~[[25]]~~ 23 wherein Y is selected from the group consisting of the formulae:

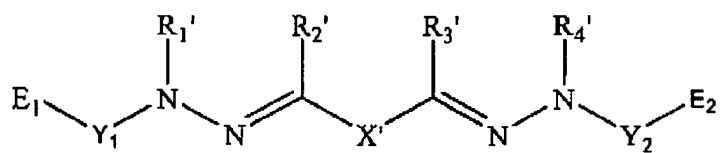


where Q, X₁, X₂, X₃, and X₄ are, each independently, O, S, or NR' where R' comprises H, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group.

Application No. 10/772,069

27. (Currently Amended) A charge transport composition according to claim [[25]] 23 wherein n is at least 5.

28. (Currently Amended) A charge transport composition prepared by the reaction of a multi-functional compound with a di-reactive-ring compound having the formula



where R_1' , R_2' , R_3' , and R_4' comprise, each independently, H, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group;

X' comprises an (N,N-disubstituted)arylamine group; and

Y_1 and Y_2 are, each independently, a linking group, wherein Y_1 and Y_2 , each independently, comprise a $-(CH_2)_k$ - group where k is an integer between 1 and 30, inclusive, and one or more of the methylene groups is optionally replaced by O, S, N, C, Si, B, P, C=O, O=S=O, a heterocyclic group, an aromatic group, urethane, urea, an ester group, an NR_{16} group, a CR_{17} , or a $CR_{18}R_{19}$ group where R_{16} , R_{17} , R_{18} , and R_{19} are, each independently, a bond, H, hydroxyl, thiol, carboxyl, an amino group, an alkyl group, an alkenyl group, a heterocyclic group, an aromatic group, or part of a ring group and wherein if the linking group contains a sulfur atom then the linking group must contain at least two sulfur atoms; and

E_1 and E_2 are, each independently, a reactive ring group.

Application No. 10/772,069

29. (Original) A charge transport composition according to claim 28 wherein X' is selected from the group consisting of a carbazole group, a julolidine group, a triarylamine group, a dialkylarylamine group, and an alkyl diarylamine group.

30. (Canceled).

31. (Original) A charge transport composition according to claim 28 wherein E₁ and E₂, each independently, are selected from the group consisting of 3-, 4-, 5-, 7-, 8-, 9-, 10-, 11- and 12-membered heterocyclic ring groups.

32. (Original) A charge transport composition according to claim 31 wherein E₁ and E₂, each independently, are selected from the group consisting of 3-, 4-, 5-, 7-, 8-, 9-, 10-, 11-, and 12-membered cyclic ethers, cyclic amines, cyclic sulfides, cyclic amides, N-carboxy- α -amino acid anhydrides, lactones, and cyclosiloxanes.

33. (Original) A charge transport composition according to claim 32 wherein E₁ and E₂, each independently, are selected from the group consisting of epoxides, oxetanes, aziridines, thiiranes, 2-azetidinone, 2-pyrrolidone, 2-piperidone, caprolactam, enantholactam, and capryllactam.

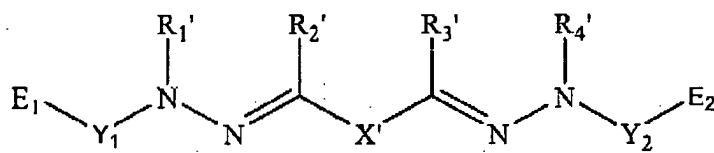
34. (Original) A charge transport composition according to claim 28 wherein the multi-functional compound is a di-functional compound.

Application No. 10/772,069

35. (Original) A charge transport composition according to claim 34 wherein the di-functional compound is selected from the group consisting of a triol, a triamine, a trithiol, a diol, a dithiol, a diamine, a dicarboxylic acid, a hydroxylamine, an amino acid, a hydroxyl acid, a thiol acid, a hydroxythiol, and a thioamine.

36. (Withdrawn-Currently Amended) An organophotoreceptor comprising:

(a) a polymeric charge transport composition prepared by the reaction of a multi-functional compound with a di-reactive-ring compound having the formula



where R_1' , R_2' , R_3' , and R_4' comprise, each independently, H, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group;

X' comprises an (N,N-disubstituted)arylamine group; and

Y_1 and Y_2 are, each independently, a linking group, wherein Y_1 and Y_2 , each independently, comprise a $-(CH_2)_k$ - group where k is an integer between 1 and 30, inclusive, and one or more of the methylene groups is optionally replaced by O, S, N, C, Si, B, P, C=O, O=S=O, a heterocyclic group, an aromatic group, urethane, urea, an ester group, an NR_{16} group, a CR_{17} , or a $CR_{18}R_{19}$ group where R_{16} , R_{17} , R_{18} , and R_{19} are, each independently, a bond, H, hydroxyl, thiol, carboxyl, an amino group, an alkyl group, an alkenyl group, a heterocyclic

Application No. 10/772,069

group, an aromatic group, or part of a ring group and wherein if the linking group contains a sulfur atom then the linking group must contain at least two sulfur atoms; and

E₁ and E₂ are, each independently, a reactive ring group; and

(b) a charge generating compound; and

(c) an electrically conductive substrate over which the charge transport composition and the charge generating compound are located.

37. (Withdrawn) An organophotoreceptor according to claim 36 wherein X' is selected from the group consisting of a carbazole group, a julolidine group, a triarylamine group, a dialkylarylamine group, and an alkyl diarylamine group.

38. (Canceled).

39. (Withdrawn) A charge transport composition according to claim 36 wherein E₁ and E₂, each independently, are selected from the group consisting of 3-, 4-, 5-, 7-, 8-, 9-, 10-, 11- and 12-membered heterocyclic ring groups.

40. (Withdrawn) A charge transport composition according to claim 39 wherein E₁ and E₂, each independently, are selected from the group consisting of 3-, 4-, 5-, 7-, 8-, 9-, 10-, 11- and 12-membered cyclic ethers, cyclic amines, cyclic sulfides, cyclic amides, N-carboxy- α -amino acid anhydrides, lactones, and cyclosiloxanes.

Application No. 10/772,069

41. (Withdrawn) A charge transport composition according to claim 40 wherein E_1 and E_2 , each independently, are selected from the group consisting of epoxides, oxetanes, aziridines, thiiranes, 2-azetidinone, 2-pyrrolidone, 2-piperidone, caprolactam, enantholactam, and capryllactam.

42. (Withdrawn) A charge transport composition according to claim 36 wherein the multi-functional compound is a di-functional compound.

43. (Withdrawn) A charge transport composition according to claim 36 wherein the di-functional compound is selected from the group consisting of a triol, a triamine, a trithiol, a diol, a dithiol, a diamine, a dicarboxylic acid, a hydroxylamine, an amino acid, a hydroxyl acid, a thiol acid, a hydroxythiol, and a thioamine.